

Appl. No. : 10/041,029
Filed : December 28, 2001

REMARKS

Claims 65-90 are pending. Claims 65, 71, 79, and 89 are amended herein. New Claims 91 and 92 are added herein.

Examiner Interview

Applicants thank the Examiner for the courtesy extended Applicants' representative in the personal interview of April 5, 2005. The present response is consistent with the discussions in that interview.

Claim Objections

Claims 71 and 89 are objected to because of informalities. To overcome these objections, Claims 71 and 89 have now been amended in accordance with the Examiner's suggestions.

Rejections Under 35 U.S.C. §103

Claims 65-70 and 73-90 are rejected under 35 U.S.C. §103(a) as being unpatentable over Applicants' "admission of prior art" in view of Kamikawa et al., U.S. Patent No. 6,050,275. Applicants respectfully disagree that Claims 65-70 and 73-90 are obvious in view of the "admitted prior art" and Kamikawa et al.

Independent Claim 65 recites a second processing step on the workpiece in the upper section using the liquid. Independent Claim 68 recites a first processing step in an upper section using a liquid. Independent Claim 79 recites modifying the workpiece in the second chamber using the liquid, wherein the second chamber is vertically disposed above the first chamber. Thus, each of the independent claims recites the use of a *liquid* in an upper chamber.

Kamikawa et al. disclose an upper *drying* chamber 42 and a lower cleaning bath 41. See Kamikawa et al., at, e.g., Abstract and Fig. 4. The upper chamber in Kamikawa et al. is provided for *drying* the wafer, and there is therefore no liquid used in the upper drying chamber 42 in Kamikawa et al. At Col. 11, lines 51-67, Kamikawa et al. disclose the introduction of IPA and nitrogen *gases* into the drying chamber 42. Thus, Kamikawa et al. teach the use of *gases*, not *liquids*, in the drying chamber 42 for drying the wafer.

Furthermore, the mechanism of Kamikawa et al. is not suited for use of liquid processing in the upper chamber 42 because there is no mechanism indicated in the upper chamber 42 for

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draining liquid. Rather, Kamikawa et al. disclose a horizontal slide door arrangement 64 between the upper chamber 42 and the lower chamber 41. The slide door arrangement comprises O-rings 72c and air grip seals 72a, 72b configured to tightly close the lower opening 62 in the upper chamber. Thus, Kamikawa et al. are concerned with preventing evaporation from the lower chamber 41 from moving into the upper *drying* chamber 42, which is not suited for *liquid* processing.

There is no teaching or suggestion in Kamikawa et al. of an upper chamber in which the use of liquid takes place in an upper chamber, as recited in independent Claims 65, 68, and 79. Claims 65, 68, and 79 are therefore patentable as they are not obvious in view of Applicant's "admitted prior art" and Kamikawa et al. Claims 66, 67, 69-70 and 73-90, which depend from and include all of the limitations of Claim 65, 68, or 79, are therefore also patentable over Applicant's "admitted prior art" and Kamikawa et al., either alone or in combination. Furthermore, each of the dependent claims recites further distinguishing features of particular utility.

Claims 71 and 72 are rejected under 35 U.S.C. §103(a) as being unpatentable over Applicant's admission of prior art in view of Kamikawa et al., and further in view of Matsukawa et al., U.S. Patent No. 5,518,542. As discussed above, neither Applicant's "admitted prior art" nor Kamikawa et al., either alone or in combination, teaches or suggests an upper chamber in which the use of liquid takes place in an upper chamber, as recited in Claim 68. Similarly, Matsukawa et al. do not teach or suggest an upper chamber in which the use of liquid takes place in an upper chamber.

Claim 68 is therefore patentable over Applicant's "admitted prior art," Kamikawa et al., and Matsukawa et al., alone or in combination. Claims 71 and 72, which depend from and include all of the limitations of Claim 68, are therefore also patentable. Furthermore, each of the dependent claims recites further distinguishing features of particular utility.

Claim Amendment

For clarification and a more varied claim scope, independent Claim 79 has been amended to recite removing conductive material from the workpiece in a first chamber by applying a potential difference between the workpiece and an anode. This amendment is fully supported by the specification, as originally filed, at, for example, page 9, line 21 – page 10, line 6.

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Claims 65 and 79 have also been amended to delete the term "only" as unduly limiting.

New Claims

New Claims 91 and 92 are added and are fully supported by the specification, as originally filed, at, for example, page 13, lines 4-7, and page 15, lines 17-21.

Conclusion

Applicants respectfully submit that all of the pending claims are patentably distinguishable and allowable over the prior art of record. The cited references, either alone or in combination, do not teach or suggest the claimed invention.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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